CLAIMS

What is claimed is:

1. A printed circuit board comprising:

a power layer, wherein the power layer has *n* plane splits, wherein *n* is an integer greater than or equal to one, wherein a lossy material is added to each of the *n* splits; and

a ground layer.

2. The printed circuit board of claim 1, wherein the lossy material has a DC impedance range of about 1,000 ohm to 10,000 ohm.

3. The printed circuit board of claim 1, wherein the lossy material has a conductivity range of about 100 Mho/meter to 1,000 Mho/meter.

4. The printed circuit board of claim 1, wherein the lossy material has electrical attributes that are consistent between about 100 Megahertz to 1 Gigahertz.

5. The printed circuit board of claim 1, wherein the lossy material is a conductive ink.

6. The printed circuit board of claim 5, where in the conductive tape is comprised of a plurality of silver particles embedded in an insulating material.

7. The printed circuit board of claim 1, wherein the lossy material is

a conductive tape;

8. The printed circuit board of claim 1, wherein the ground plane has a plurality of splits.

9. The printed circuit board of claim 8, wherein a lossy material is added to each of the plurality of splits in the ground plane.

10. The printed circuit board of claim 1, wherein the printed circuit board is a four layer printed circuit board.

11. A method of adding a lossy material to a printed circuit board layer, comprising:

depositing a conducting metal on a wafer surface;

covering the surface layer with a film of photoresist;

exposing portions of the film of photoresist to light;

washing away the non-exposed portions of the photoresist to light;

etching away the conducting metal below the photoresist layer;

stripping the remaining photoresist to form a conductive layer, wherein the conductive layer has a plurality of splits; and

silk screening a lossy material into the plurality of splits.

12. The method of claim 11, further comprising inspecting the printed circuit

board.

13. The method of claim 11, wherein the conductive layer is the power layer.

14. The method of claim 11, wherein the conductive layer is the ground layer.

15. The method of claim 11, wherein the lossy material has a DC impedance range of 1,000 ohm to 10,000 ohm.

16. The method of claim 11, wherein the lossy material has a conductivity range of 100 Mho/meter to 1,000 Mho/meter.

17. An apparatus comprising:

means for providing a high frequency return path of a printed circuit board; and

means for reducing the radiation from plane splits of the printed circuit board.

18. The apparatus of claim 17 further comprising a means for reducing the routing complexity in the printed circuit board.

19. The apparatus of claim 17 further comprising a means for reducing the waveform distortion of signals of the printed circuit board.

20. A method of adding a lossy material to a printed circuit board layer, comprising:

laminating a copper foil on a non-conducting layer;

covering the surface layer with a film of photoresist;

exposing portions of the film of photoresist to light;

washing away the non-exposed portions of the photoresist to light;

etching away the conducting metal below the photoresist layer;

stripping the remaining photoresist to form a conductive layer, wherein the conductive layer has a plurality of splits; and

silk screening a lossy material into the plurality of splits.

21. The method of claim 20, wherein the non-conducting layer is a prepreg layer.

22. The method of claim 20, wherein the non-conducting layer is a core dielectric.